## **COCUMENT RESUME**

ED 078 050

TM 002 865

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TITLE

Assessment of Friendship, Leadership, Work Patterns

in a Desegregated Urban School.

PUB DATE

73

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NOTE

17p.; Paper presented at annual meeting of American

Educational Research Association (New Crleans,

Louisiana, February 25-March 1, 1973)

EDRS PRICE DESCRIPTORS

MF-\$0.65 HC-\$3.29

Academic Achievement; \*Behavior Patterns; Childhood

Friendship; Ccmparative Analysis; \*Elementary Grades; Ethnic Studies; \*Group Dynamics; Interpersonal

Competence; Leadership Qualities; \*School

Integration; \*Sociometric Techniques; Technical

Reports; Urban Schools

## ABSTRACT

The desired choice patterns of friendship, leadership, and classroom workship of children attending a desegregated/integrated elementary urban school were determined. Utilizing quota sampling, 159 children were examined on a three-choice, six-criteria, non-ranked sociometric test. Children were not asked to make rejections. Cliques and isolates/rejects were examined as to their ethnic makeup. Ethnic self-preference was examined, and the relationships between children's sociometric position of workship questions and achievement were investigated. White, black and Asian children did not appear to have been influenced by ethnic grouping in friendship, leadership and workship choices. A preponderance of ethnic self-preference was not evident in any of the questions. Comparisons between workship choices and achievement did not appear significant except in the case of white isolate children who were found to have achievement scores six months above grade level. Patterns of friendship, leadership, and workship choices were found to be dependent on sex, although open classrooms had more cross-sex choosing than standard classrooms. (Author)

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## I. INTRODUCIJON

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There exists a need to assess the integration patterns when children in recently court-eraceed a segregated school districts in order to truely enhance the integration effort. Desegregation is merely the process of moving bodies to achieve others numberied balance within a school. The process of integration applies that students, once in a desegregated site, will freely interact among all ethnic groups. Socientry provides one method of assessing the extent of such interaction. Information from such a tether can not only provide ethnic group interaction data, by also data on other relevant items as cross-sex choosings, existing eliques, and isolates or rejects. These items can be examined in fight of grade levels, teacher characteristics and classroom chimate.

This study grew out of a request made by an urban Intermediate (grades 4-6, 575 children) School staff. The school was at the and of its second year of desegregation/integration, but he effort had been undertaken to assess its progress in this endeaver. The staff had specified that a report was desired thich would not give just tere figures and statistical tests or significance. They needed information which would enhance program improvement. I terefore, the study was designed and the report compaced in such a larger that data could be utilized by the decision makers at the containstate (principal, vice-principal, teams) and counselor). These percental were in need of information that would improve their task of insercegating/integrating the school, and le useful to persons not trained in educational research.

This paper focuses on the examination of desired friendings. leadership and work patterns at the school site.\*

# II. DEFINITIONS OF TERMS USED

Desegregation is defined as the school's athmic makeup reliveting the State guidelines for desegregation. Any school that deviates 15% or more from the entire ethnic distribution of the school system as a whole is not considered desegregated.

<sup>\*</sup> The study had also aspected melt-concepts of the various of the groups are the play as a fixther attended loss of the  $\alpha$ , for a capturation.



Desired friendship patterns. Desired friendship proterns are determined operationally by the choices the child makes for the statements: if I could be three other children in this class. I would be; the three children I would like to sit with in class."

Desired leadership patterns. Desired leadership patterns are determined operationally by the choices the child makes for the statements: in an election for three class officers I would vote for; "in an election for three team captains, I would vote for."

Desired work patterns. Desired work patterns are determined operationally by the choices the child makes for the statements: "the three children I would like to work with on a class project; "if I needed help with school work, the three children I would like to help me."

Ethnie group. Ethnic group is defined as a number of persons with a common physical trait (e.g., skin color) which sets them apart from others. In that this researcher does not believe in the concept of racial groups, the term ethnic group is utilized in lieu of a better term. Ethnic group is sometimes defined as a number of persons with a common cultural heritage. This may or may not be true with the groups examined in this study.

Integration. Integration is defined as the participatory social interaction of ethnic groups once desegregation has been achieved.

Open classroom. The term "open classroom" was applied to any classroom which the school administrators felt had a high degree of student interaction; interactive patterns which are not traditional to the standard classroom.

Standard classroom. The term standard classroom was applied to any classroom which the school administrators felt did not have a high degree of student interaction; interactive patterns which are not characteristic of the open classroom.

## III. THE ENVIRONMENTAL SETTING

The school is located within a large urban city comprised of many different ethnic groups; a city where its school system has been plagued with the problem of "de facto" school segregation resulting from segregated housing patterns. This school is located within a Complex of 13 primary (K-3) and intermediate (4-6) schools, which was desegregated one year before the United States District Court ordered citywide desegregation for the city's elementary schools. The Complex was created as a model for future complexes in the city; complexes which evolved one year after under the court mandate for desegregation.

The school is housed in an old rectangular-floored classroom building filled to its capacity with students and temporarily housed kinderparten classes brought in from another school which is in the process of remodeling. The school consists of 23 classes (excluding the temporarily housed kindergartens):



# TABLE ! NUMBER OF CLASSES IN SCHOOL AND GRADE LEVEL

Grade Level	Number of		
	Ċlasses		
l;	8		
5	7		
6	8		
Tot	ral=23		

In the Fall of 1972, the school obtained a new administration, the leadership of which has been committed to the integration of students. To demonstrate the sincerity of the schools efforts, one need only to examine the recently developed Club Activities Program federally funded under Emergency School Assistance Program (ESAP). The intent of the program (Mayeda, 1972) was:

...to establish special interest clubs for /The/ entire student body with the participation of the entire staff, parents, and community businesses based on the premise that in order to establish successful desegregation, children need to get together on a common interest level that cuts across ethnic lines and to develop an awareness about themselves and their backgrounds and respect for others' talents and abilities ... It was noted that there were ethnic group preferences in certain activities. The /ethnic7 composition of each club was charted for the first activity period. Where there was radical ethnic group imbalance in a particular club, an effort to find out why and what could be done about the situation was begun. It was found that often it was just a matter of wording or emphasis.

A continual analysis is made each semester by the district to ascertain that the elementary schools fit the State guidelines for judging ethnic balance. Before desegregation (Fall 1970) the school exceeded State guidelines in the percentage of the Black ethnic category. After the Fall 1970 implementation of desegregation, the school was within the State guidelines for judging ethnic balance.

With regard to desegregation and ethnic group counts within classes, it was found upon examination of the Fall 1971 class lists, that only 30% of the classes met the State guidelines for judging ethnic balance. In almost all cases the 70% imbalance reflected an Asian overpopulation averaging an excess of three students per class. It should be pointed out, however, that this was never a stated goal; State gui delines were only applicable to the total school population. Thus a school, but not classes, may be desegregated.

In the quota cample used for this study (balanced by classroom environment, grade level, sex and ethnic designation of teachers), the number in each othnic group for each classroom did not differ significantly. The percentage of children in each ethnic group of

the sample also did not differ significantly from the total school ethnic population.

## IV REVIEW OF THE LITERATURE

The need to belong and be accepted has been discussed most effectively by Maslow (1954), who lists fulfillment of this need as basic to becoming a self-actualized person. These needs, however, cannot be satisfied directly and are dependent upon the positive reactions of others. Several investigations have emphasized the importance of social acceptability in the classroom (Moreno, 1934; Gronlund, 1956; Northway, 1952).

Dorojaiye (1969) attempted to determine the patterns of friend-ship and leadership choices of 8-11 year olds in a mixed ethnic school and examined ethnic self-preferences of 202 white, 77 Black and 33 mixed children. He also attempted to investigate the relationship between a subject's sociometric status and the social-pscyhology environment. His results revealed that friendship choices were dependent on sex, but leadership choices were independent of sex. He learned that subjects chose friends of their own ethnic group and that no significant differences existed between ethnic groups in motivation for choosing friendships.

Older studies (Moreno, 1934) and Criswell (1939) have shown cleavages between Black and white children in segregated communities. Such cleavage does not exist in recent studies in cities where integration has been in effect. Raths and Schweikart (1946) studied the sociometric scores of fifth and sixth grade students. The results indic ated acceptance of each group by their members and by every other ethnic group. Gronlund (1956) noted similar results with fourth grade classrooms.

Sociometric instruments were administered to Riverside children (Riverside, 1971) over a five year period with data recorded by class distribution (sex and ethnic group). Data was analyzed by ethnic group choosings, but results of this study were not available at the time of this writing.

## V. PURPOSE

The purpose of this study was threefold:

- a) to determine the ethnic composition (integrated, segregated, etc.) of the cliques and isolates/rejects;
- b) to determine the self-preference ratio of ethnic groups; and
- c) to determine if obtained reciprocal choosings deviated from the expected for each ethnic group.

Three criteria levels were established. It was decided that if these levels were not reached that affirmative action would be necessary:

- a) fifty percent on more of the cliques should be integrated, and the obtained count for isolates/rejects should not deviate more than 10% points from the expected for any one ethnic group;
- b) no ethnic group should have a significant index of self-oreference;
- c) and the obtained number of reciprocal choosings should not deviate by 10% difference points or more from the expected for any ethnic group

# VI. PROCEDURE

# Instrument

One of the most widely-used methods of analyzing peer relationships is that of sociometry. Sociometry is a method of discovering and analyzing patterns of choosings within a group setting.

It has been found that teachers overrate the status of certain students who may be outstanding in leadership roles, but are not well-liked by their peers. Teachers are also inclined to overrate students who are regarded favorably by teacher expectations, but the overrated students are not regarded favorably by other students. Teachers also tend to underrate the choice-status of students who do not adapt well to the academic climate. By using a sociometric instrument, one can counteract for observer bias in rating student preferences.

Content. The instrument was a three choice, non-ranked sociometric test with six criteria examining desired friendship, leadership, and work patterns; friendship: 1) If I could be three other children in this class, I would be; 2) The three children I would like to sit with in class are. Leadership: 1) In an election for three class officers I would vote for; 2) In an election for three team captains, I would vote for. Work patterns: 1) The three children I would like to work with on a class project are; 2) If I needed help with school work the three children I would like to help me are.

Classroom rejects were not requested. Therefore, without negative choices, it is impossible to distinguish between class memb ers who are rejected and those who are isolated by their peers. Three nominations were used in order to show cliques and other subformations in the group; less than three is too limiting, more than three does not increase the efficiency of the data.



Validity. Gronlund (1959) and Gage (1963) show in a summary of sociometric research that sociometric elections have been found to possess considerable concurrent validity; that is, sociometric elections correlate highly with the same dimensions measured on other group and individual personality type tests. In terms of longitudinal validation, or predictive valialty studies, Moulton, Blake and Fruchter (1955) found that sociometric type choices are more predictive for a variety of later criteria than nearly any other predictors. Kuhlen and Collister (1952) followed a group of sixth and ninth graders through high school and reported that graduates had higher sociometric status than dropouts. Barelay (1966) followed up 950 junior high school students to their senior year and found that 64% of the male dropouts had been in the cell of lowest social desirability computed on the basis of teacher and peer ratings and 54% of the female dropouts had been in the lowest cell. Kennedy (1969) found that sociometric ratings combined with teacher ratings predicted referrals to elementary counselors and mental health clinic sources. Sociometric instruments contain face validity in that the sociometric evaluation is a direct measure of the kind of behavior under investigation.

Reliability. Lind sey and Borgatta (1954) utilizing an index method found the instrument to possess high reliability. Gronlund (1959), utilizing split-half reliability, found correlations of .54 to .86 for elementary subjects. Kerr (1954) and Gronlund (1959), using alternate forms approaches for reliability, found similar high correlation coefficients. Moulton, Blake and Fruchter (1955) summarizing 27 reliability studies found a high consistency in sociometric choices over a week (.90). This same evidence was found by Barclay (1964) summarizing eight reliability studies on 800 subjects.

# Design

Sample. The instrument was administered to a quota sample of urban desegregated/integrated intermediate classes (1, 5, and 6th grades). The sample was balanced for grades, ethnic and sex designation of teachers, and classroom environment (open vs. standard classrooms).

Administration. Each question was read aloud by the administrator to compensate for various reading abilities. A list of names of all the children in the class with an assigned number was distributed. Children needed to only write the numbers of their choices; not the actual name. Students were requested to put their name on their test booklet.

## Analysis \*

Sociograph. Sociometric research employs two kinds of formats for visual analysis, the sociograph and sociogram. The pictorial form of the sociogram is difficult to construct and



<sup>\*</sup> The procedure for analysis of such data is presently being programmed for computer use. More information can be obtained from the author.

is not subject to mathematical analysis. In this study the sociograph is used in that it combines the quantitative features of the matrix table with the graphic features of the sociogram. These kinds of matrix analysis approaches have been used by Bonney and Fessenden (1955), Forsyth and Katz (1946), Clark (1952, 1961), Luebke (1954), Luce and Perry (1949), and Festinger (1949) who used matrix algebra. Matrix analysis is still in the process of development. It can handle more complex sociometric data than the sociogram and it is subject to quantitative techniques. Machine tabulation methods are described by Boum and Criswell (1947) and Katz (1947) which diminish the time-consuming task of manipulating the matrix table.

The sociograph is a matrix arranged on graph paper. It is relatively simple to prepare; the only complication is in determining the sequence of names to appear in the matrix. From the sociograph one can read the interactions of any individual, or any subgroup at a glance. Table II is a sociograph of the nominations submitted by a teacher's class. The X's indicate positive nominations with the X's indicating reciprocal nominations. If one reads across the rows he finds the nominations received by individuals. Along the first row, for example, it appears that Keith received nominations from Sammy, Kenneth, Henry, Raymond, Ted, Edgar, Frank, Calvin and Gilbert. In that the symbol M indicates a mutual or reciprocated nomination, all of Keith's choices are reciprocated.

The diagonal marks off the spaces which would otherwise represent each individual's choice of himself. Whether reading down or across the sociograph, the diagonal line indicates the position of the individual whose row or column is under consideration. Any nominations marked in a line at right angles to the diagonal and equidistant from it on both sides of the diagonal are mutual or reciprocated.

Besides the diagonal line, there are other lines on the graph which mark off special re ctangles. The rectangles enclose interactions of subgroups. The rectangles through which the diagonal passes are the subgroups within the total group. For example, in this class, there is an ingroup of four students. These four are woven together by their mutual nominations. They do not choose any other members in the class. The ingroup is partially integrated in that no Blacks are chosen by its members. The group is segregated by sex.

Following the ingroup in the interaction pattern, definitely separated from the ingroup, is Katherine's sub group. Here it is possible clearly to see the relation of this subgroup to the rest of the class. This group of girls is self-contained. They are below the ingroup in the pattern, yet they have acceptance among themselves (a second ingroup).



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TABLE II	
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Next in the pattern, are four boys who choose each other (with the exception of one), but also choose members in the dominant group. The fourth group consists of three boys. Two who choose each other, and two who choose members from the dominant group. Following these "fringers" are those students who are isolates or rejects. One isolate/reject boy is chosen by another. The attention of subgroups to groups above them is shown in the rectang les to the right of the diagonal.

Several times in the preceding discussion the expressions above and below have been used to indicate more or less status. This meaning has been intentional. The subgroups in the diagram are in the order of status. This is because of the way the order of names in the matrix has been determined. The sequence of names is in such order that the following rule is true: In a sociograph, the sequence of names starts with the most chosen person in the group and proceeds in the order that individuals are most chosen by those above them in the sequence. Those who are not chosen from members above them are in the order they are most noticed from the isolates/rejects below them. Those who are not chosen at all are not in any sequence. (For detailed computations concerning the construction of the sociograph for non-ranked, non-rejected choices, one is referred to Krenkel (1972)).

Sociographs were analyzed (graphic analysis) for the total sample by dominant groups and secondary groups to determine if the groups were integrated (any group with at least one Asian child, one Black 'hild and one white child), partially group of children ethnically limited integrated (any `. to, and consisting of, at least one white child and one Black child group, ethnically limited to and consisting of, at least one white child and one Asian child, or any group ethnically limited to and consisting of at least one Asian child and one group of children Black child), or segregated (any composed entirely of whites, Blacks or Asians). Isolates/rejects were also examined by ethnic group composition.

Self-preference. For the measurement of group self-preference, a double-ratio method (index analysis; Criswell, 1946) was utilized taking into consideration the expected distribution of choices determined on the basis of the numbers of persons in each ethnic group. Black, Asian and white choices for the total sample of each question were analyzed by counting the responses the group in consideration gave itself and counting the responses that it did not give to itself. The expected ratio is calculated by the formula:

$$\frac{a-1}{n-a} = E$$

"a" being the number of individuals in the group under analysis, and "n" the number of individuals in the population.

The obtained ratio is calculated by the formula:



$$\frac{b}{c} = 0$$

"h" being the number of choices members gave to their own group, and "e" the number of choices that group members gave to other groups.

The self-preference index is calculated by the formula :

$$\frac{O}{E} = Y$$

"O" being the obtained ratio, "E" being the expected ratio, and "Y" the self-preference index.

A self-preference index calculated for any group would, if greater than 1.00, indicate that the members preferred themselves to the other group involved. A value of less than 1.00 would denote that the other group was preferred. Absence of preference would appear in an index of i.00, or approximately 1.00.

The size of the final index is not in itself an indication that preference is present to a statistically significant degree. For this purpose, the deviation of the distribution of choices from the expected distribution for the total sample was tested by chi-square methods (statistical analysis).

Reciprocals. The reciprocal choices for the total sample on each question were amlyzed (statistical analysis) by ethnic groups. Reciprocal choices are those choices where individuals chose each other (they reciprocated). Percentages were calculated as to what percent of the total reciprocals each possible combination of othnic pairs (B-B, W-W, A-A, B-W, W-A) received for each question and were compared with expected percentages based on probabilities. A criteria level of 10% or more difference points between expected and obtained values for each ethnic group was utilized for determining significant departures.

The following formula was used for obtaining the expected percentage value for each possible combination of ethnic pairs (3X3), collapsing three ordered-pair cells to achieve the six groupings:  $\frac{b}{N-1} = E$ 

"a" representing the number in the ethnic group doing the choosing;
"b" representing the number in the ethnic group chosen (b-l if
the chosen group was the same as that of the chooser), "N" representing
the total population, and "E" representing the expected percentage
for the ethnic pair.

## VII. RESULTS

Cliques, Isolates/Rejects. Of the dominant cliques 77% were integrated and 23% were partially integrated (composed of white/Asian interaction). No segregation occurred.

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Of the acconducy Cliques 3/7 were integrated and M7% were partially integrated with most partially integrated groups composed of white/Asian interaction and only a few groups with white/Black interaction. Sixteen percent of the cliques were segregated with segregation excurring among all three cthmic groups.

Combining both secondary and dominant cliques , 60% of all groups were integrated with 33% partially integrated. Only 7% were segregated. Thus the data indicated that at least 50% of the groups were integrated, the criteria level for this study.

The most blatant segregation was that of sex, although in the open classrooms some sex cross-choosing, were made in that the cliques were more encompassing of the total members in the classrooms. The opportunity for increased interaction and increased cral communication, both are known to increase liking behaviors (Johnson and Bany, 1970).

Table III illustrates the percentage point differences between expected and obtained percentages for ethnic group members designated as isolates/rejects. In that no percentage difference points exceeded the criteria level of 10%, the data failed to indicate that any one evanic group dominated in this category.

TABLE III
COMPARISON OF OBTAINED ISOLATES/REJECTS
WITH EXPECTED ISOLATES/REJECTS IN
PERCENTAGES FOR EACH ETHNIC GROUP (N=318)

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Ethnic Group Self-preference. Table IV reports the ethnic group self-preference indices. Deviations of the distribution of choices from the expected distribution were tested by chisquare methods. Significant preferences ere indicated. The data indicated that Black and Asian ethnic groups obtained high self-preference scores.

TABLE IV
SELF-PREFERENCE INDEXES FOR
EACH ETHNIC GROUP FOR EACH QUESTION
AND INDICES OF SIGNIFICANT PREFERENCES

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Reciprocals. Table V reports the obtained and expected percentages of reciprocals for each possible combination of ethnic pairs for each question. Some groups exceeded the criteria level of 10% point if for each.

By examining percentage point differences for an ethnic pair, one can examine the rank for each question. For example, examining Black-black pairs, one finds that the question "team captains" occupies the nighest rank with the following questions following in descending order: "class project," "sit in class," "like to be," "class officers," "school work."

## TABLE V

PERCENTING OF HERE TROOM STREET VED AND FRESCO. IN A STREET SOLE SYNTOWED FOR EACH EXPRESSION OF HEREE QUESTION EVENTS PARASICS HAGE QUESTION

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"()" = % point difference equal to, or in excess of, 10 points.

## VIII. DISCUSSION

It appeared that the dominant and secondary cliques found in the sample were well integrated ethnically (60%). Those groups only partially integrated (33%) were usually not composed of white/Black or Asian/Black interactions. Ethnic segregation occurred only 7% of the time. The only blatant form of segregation was that of sex.

Isolates/rejects did not deviate significantly from the expected values for each ethnic group, suggesting that some other variable other than othnic membership contributes to the isolate/reject status in the classroom.



When examining the self-preference indices it is noticeable that both Black and Asians tend to arguificantly prefer their own ethnic members to others in the classroom. Black members possessed the highest ethnic group self-preference indexes with class project choices ranking the highest in ethnic self-preference and school work choices the lowest, yet still significantly high. White members did not appear to have any significantly high or low self-preference indexes.

Obtained reciprocal choices deviated from the expected for all othnic pairs except for white-white pairs. Black-white and Black-Asian pairs received low percentages of reciprocal choices than expected, Asian-Asian and white-Asian pairs received high percentages of reciprocal choices than expected. More reciprocal pairs were recorded for Blacks on team captain choices with the least amount for Blacks, occurring onschool work choices. White-Asian reciprocals recorded more pairs for school work choices with the least number of pairs for team captain choices.

## IX. SUMMARY/RECOMMENDATIONS

The purpose of this study was to assess the desired choice parterns of friendship, leadership, and classroom work patterns of children attending a desegregated/integrated elementary urban school. Utilizing quota campling, children were examined on a three choice, six criteria, non-ranked sociometric test. Children were not asked to make rejections. This criteria levels were established. It was decided that if these levels were not reached, affirmative action would be necessary:

- a) fifty percent or more of the cliques should be integrated, and the obtained count for isolates/rejects should not deviate significantly (exceed 10% points) from the expected for each ethnic group;
- b) that no significant differences would exist among ethnic groups on ethnic self-preferences for the six questions;
- c) and that the obtained reciprocal choosings would not deviate significantly (exceed 10% points) from the expected for all ethnic groups on each question.

Combining both secondary and dominant cliques, 60% of all groups were found integrated. Thirty-three percent were partially integrated with most interactions comprising white-Asian members. Seven percent of the cliques were segregated, with segregation occuring among all three othnic groups (Black, Asian, white). Isolates/rejects did not deviate significantly from the expected for each ethnic group. Both Black and Asian groups had significantly high ethnic self-preference choices on all of the six questions. Whites did not possess any high or low ethnic self-preference indexes.



High reciprocal difference scores were found for Asian-Asian pairs and white-Asian ethnic pairs. Black-white and Black-Asian ethnic pairs received a significantly low percentage of reciprocal difference scores.

It was recommended to the school that behavioral interactions in terms of dyadic reciprocal and coercive interactions should be initiated and measured with psychometric instruments in that ethnic bias seemed to occur among white-Black and Asian-Black interactions.

It was also recommended that more focus be placed on persons who occupy the isolate/reject category. Nickse (1972) found that lower chosen students after a small group work experience of intensive interaction, picked in-group members, and were picked by high status group members more frequently. It seems possible for lower chosen student groups, the "outsiders" to increase their social interaction skills with practice in appropriate learning settings such as intensive small groups and process-oriented learning experiences.

Finally, it was recommended that attention be placed on the sex segregation occurring within the classroom. Further investigation is needed to assess the effects of the open classroom in breaking down sex segregation.



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100	OK RAPIE	YOUR /	RUMBER
	•		GRADE
<b>YOU</b>	UR TEACHFIL'S NAME		
you loo	front of you is a list of al ur class. There is a number ok at the list, and then urit u choose in answer to each of	in front of each	name. Please
eve:	a may choose anyone in the ropils who are altent, but do norybody has lifterent feeling a no right or wrong answers.	of choose view o	nun number. As
Α.	The 3 children I would like ject are	to work with or	n a class pro-
			#
B.	If I could be 3 other child	rep in this clas	s, I would be
c.	In an election for 3 class	officers, I woul	d vote for
	<i>I</i> :		#
D.	The 3 children I would like	to sit with in	class are
			[#
E.	If I needed help with schoolike to help me are	l work, the 3 ch	ildren I vould
			<i>f</i> !
r.	In an election for 3 team c	apteins, I would	vote for
	<i>!!</i>		

